MINERAL POLICY SECTOR
INTERNAL REPORT
MRI 90/2

# CANADIAN IRON ORE INDUSTRY STATISTICS 1989

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Énergie, Mines et Ressources Canada

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# PREFACE

This report is a continuation of the Canadian Iron Ore Industry Statistics series that was developed for the Mineral Information Bulletin published from 1955 through 1970. The statistical data, when used in conjunction with the Iron Ore chapter of the Canadian Minerals Yearbook, presents a comprehensive review of the iron ore industry for 1989.

The data used in the compilation of the statistical tables were supplied to the Mineral Policy Sector by individual firms within the Canadian iron ore industry. Their cooperation and prompt responses to our requests are greatly appreciated.

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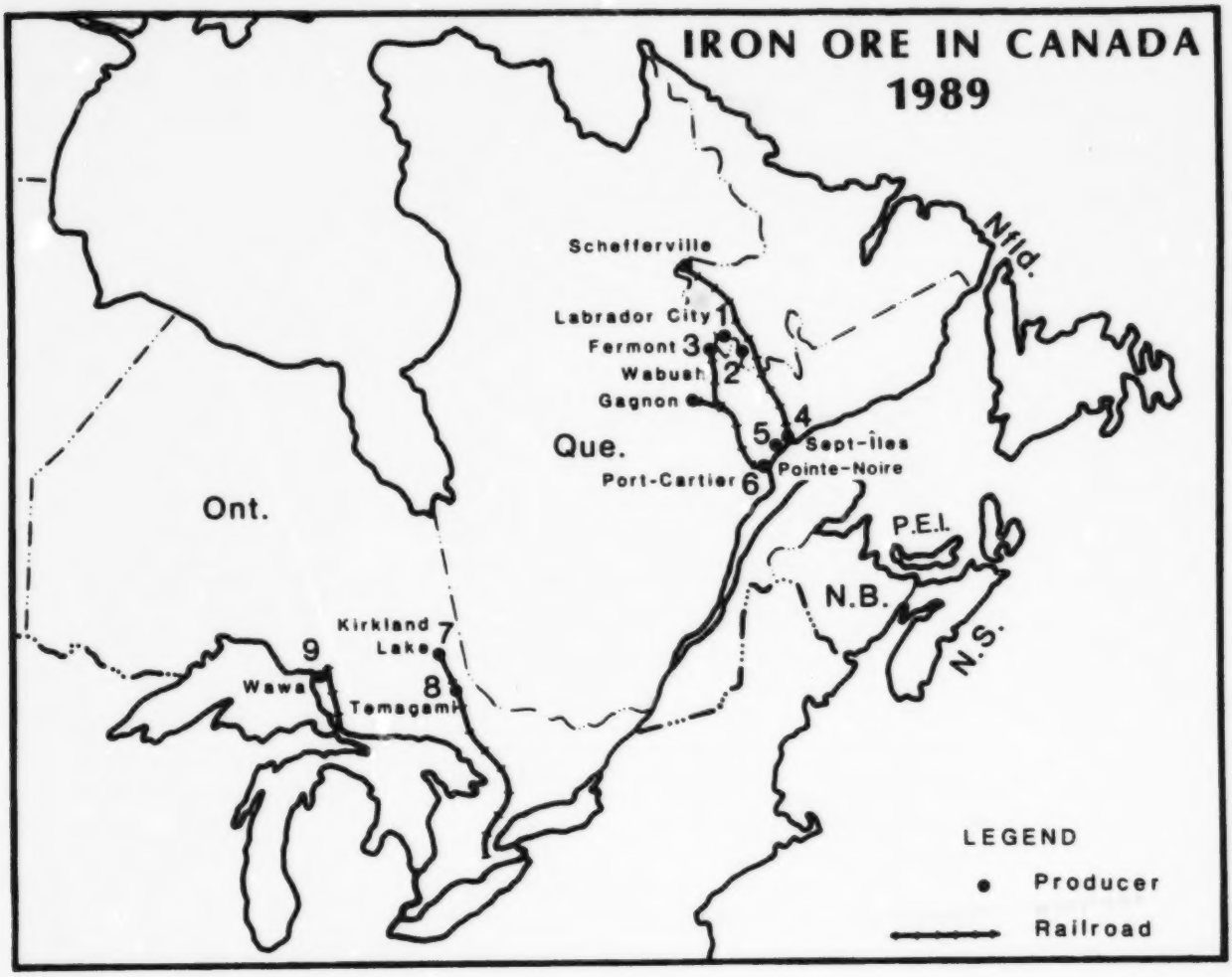
Iron Ore in Canada, 1989..... 1




## PRODUCERS
(numbers refer to numbers on map above)

1. Iron Ore Company of Canada, Carol Division (mine/concentrator/pellet plant)
2. Wabush Mines (mine/concentrator)
3. Quebec Cartier Mining Company (mine/concentrator)
4. Iron Ore Company of Canada (port)
5. Wabush Mines (pellet plant/port)
6. Quebec Cartier Mining Company (pellet plant/port)
7. Dofasco Inc., Adams mine (mine/concentrator/pellet plant)
8. Dofasco Inc., Sherman mine (mine/concentrator/pellet plant)
9. Algoma Ore division of The Algoma Steel Corporation, Limited (mine/concentrator/sinter plant)

TABLE 1: CANADA, IRON ORE PRODUCERS, 1988 AND 1989

| Company and Property Location | Participating Companies | Material Mined and/or Treated 1989 | Product Shipped 1989 | Shipments 1988 | Shipments 1989 |
|---|---|---|---|---|---|
| | | (% Fe natural) | (% Fe dry/wet) | (000 tonnes natural) | |
| Adams Mine; Boston Twp., near Kirkland Lake, Ontario. | Dofasco Inc.; managed by Cliffs of Canada Limited, a wholly-owned subsidiary of The Cleveland-Cliffs Iron Company. | Magnetite from open-pit mine 19 | Pellets 61.42/60.98 | 1 017 | 1 095 |
| Algoma Ore Division of The Algoma Steel Corporation, Limited; mine and sinter plant near Wawa, Ontario. | Wholly-owned. | Siderite from underground mine 34 | Sinter 50.3/50.3 | 1 066 | 1 243 |
| Iron Ore Company of Canada; mines, concentrator and pellet plant at Carol Lake, Labrador; direct shipping ore from stockpile at Sept-Îles, Quebec. | Labrador Mining and Exploration Company Limited 11%; M.A. Hanna Company (managing agent) 28.14%; Bethlehem Steel Corporation 34.52%; Dofasco Inc. 6.38%; National Steel Corporation 19.96%. | Hematite from open-pit mine 38.9 | Direct shipping 55.6/51.2<br>Concentrates 65.5/63.6<br>Pellets 65.0/64.0 | 788<br>4 127<br>9 853 | 177<br>5 130<br>9 838 |
| Quebec Cartier Mining Company; includes mine and concentrator at Mount Wright near Fermont, Quebec; pellet plant at Port Cartier, Quebec. | Dofasco Inc. 50%; Companhia Auxiliar de Empresas de Mineracao 25%; Mitsui & Co., Ltd., 25%. | Hematite from open-pit mine 32.1 | Concentrates 66.3/63.2<br>Pellets 65.45/64.47 | 8 506<br>8 331 | 7 734<br>8 063 |
| Sherman Mine; near Temagami, Ontario. | Dofasco Inc. 90%; Tetapaga Mining Company Limited (wholly-owned subsidiary of The Cleveland-Cliffs Iron Company) 10%. The operation and management of the mine is by Cliffs of Canada Limited, also a wholly-owned subsidiary of The Cleveland-Cliffs Iron Company. | Magnetite from open-pit mine 25.52 | Pellets 60.41/59.93 | 865 | 1 023 |
| Wabush Mines; Scully Mine includes mine and concentrator at Wabush, Labrador; Pointe Noire Division includes pelletizing plant at Pointe Noire, Quebec. | Stelco Inc. 34.5%; Dofasco Inc. 22.1%; Inland Steel Company 13.77%; Finsider of Italy 8.9% and Pickands Mather & Co. (managing agent) 6.95%., Acme Steel Co. 13.77%. | Hematite from open-pit mine 35.05 | Pellets 65.19/63.71 | 6 035 | 5 953 |

TABLE 2: CRUDE IRON ORE MINED IN CANADA, BY VARIETY AND GRADE, 1989

| | Hematite | | Magnetite | | Siderite | |
|---|---|---|---|---|---|---|
| | (tonnes) | (% Fe Nat) | (tonnes) | (% Fe Nat) | (tonnes) | (% Fe Nat) |
| Newfoundland | | | | | | |
| Iron Ore Company of Canada (Carol Division) | 35 183 022 | 38.90 | | | | |
| Wabush Mines | 19 795 310 | 35.05 | | | | |
| Quebec | | | | | | |
| Quebec Cartier Mining Company (Mount Wright) | 41 054 720 | 31.20 | | | | |
| Ontario | | | | | | |
| Adams Mine | | | 3 397 445 | 23.00 | | |
| Algoma Ore Division | | | | | 1 357 020 | 34.15 |
| Sherman Mine | | | 3 595 226 | 25.52 | | |
| Total | 96 033 052 | 27.59 | 6 992 671 | 24.30 | 1 357 020 | 34.15 |

TABLE 3: CRUDE IRON ORE MINED IN CANADA, BY MINING METHOD, 1989

| | Open-Pit | | Underground | | Total | |
|---|---|---|---|---|---|---|
| | (tonnes) | (% Fe Nat) | (tonnes) | (% Fe Nat) | (tonnes) | (% Fe Nat) |
| Newfoundland | | | | | | |
| Iron Ore Company of Canada (Carol Division) | 35 183 022 | 38.90 | | | 35 183 022 | 38.90 |
| Wabush Mines | 19 795 310 | 35.05 | | | 19 795 310 | 35.05 |
| Quebec | | | | | | |
| Quebec Cartier Mining Company (Mount Wright) | 41 054 720 | 31.20 | | | 41 054 720 | 31.20 |
| Ontario | | | | | | |
| Adams Mine | 3 397 445 | 23.00 | | | 3 397 445 | 23.00 |
| Algoma Ore Division | | | 1 357 020 | 34.15 | 1 357 020 | 34.15 |
| Sherman Mine | 3 595 226 | 25.52 | | | 3 595 226 | 25.52 |
| Total | 103 025 723 | 34.10 | 1 357 020 | 34.15 | 104 382 743 | 34.10 |

TABLE 4: DISPOSITION OF CRUDE IRON ORE MINED IN CANADA, 1989

| | For Direct Shipping | | To Concentration Plant | | Total | |
|---|---|---|---|---|---|---|
| | (tonnes) | (% Fe Nat) | (tonnes) | (% Fe Nat) | (tonnes) | (% Fe Nat) |
| Newfoundland | | | | | | |
| Iron Ore Company of Canada (Carol Division) | | | 35 183 022 | 38.90 | 35 183 022 | 38.90 |
| Wabush Mines | | | 19 795 310 | 35.05 | 19 795 310 | 35.05 |
| Quebec | | | | | | |
| Quebec Cartier Mining Company (Mount Wright) | | | 39 673 653 | 32.10 | 39 673 653 | 32.10 |
| Ontario | | | | | | |
| Adams Mine | | | 3 477 838 | 23.00 | 3 477 838 | 23.00 |
| Algoma Ore Division | | | 1 377 202 | 34.15 | 1 377 202 | 34.15 |
| Sherman Mine | | | 3 639 930 | 25.52 | 3 639 930 | 25.52 |
| Total | | | 103 146 955 | 34.47 | 103 146 955 | 34.47 |

TABLE 5: USABLE IRON ORE PRODUCED IN CANADA, BY TYPE OF PRODUCT, 1989

| | Direct Shipping | | Concentrate | | Agglomerate | | Total | |
|---|---|---|---|---|---|---|---|---|
| | (tonnes) | (% Fe Nat) | (tonnes) | (% Fe Nat) | (tonnes) | (% Fe Nat) | (tonnes) | (% Fe Nat) |
| Newfoundland | | | | | | | | |
| Iron Ore Company of Canada (Carol Division) | | | 4 096 773 | 64.33 | 10 496 532 | 64.21 | 14 593 305 | 64.24 |
| Wabush Mines | | | | | 6 323 754 | 63.63 | 6 323 754 | 63.63 |
| Quebec | | | | | | | | |
| Quebec Cartier Mining Company (Mount Wright) | | | 8 691 068 | 63.20 | 8 119 295 | 63.95 | 16 810 363 | 63.56 |
| Ontario | | | | | | | | |
| Adams Mine | | | | | 1 138 937 | 60.91 | 1 138 937 | 60.91 |
| Algoma Ore Division (1) | | | | | 1 241 120 | 50.32 | 1 241 120 | 50.32 |
| Sherman Mine | | | | | 1 034 157 | 59.93 | 1 034 157 | 59.93 |
| Total | | | 12 787 841 | 63.56 | 28 353 795 | 63.11 | 41 141 636 | 63.25 |

(1) Includes 311 797 tonnes of purchased iron oxides and 129 158 tonnes of lime.

TABLE 6: WASTE/ORE CONCENTRATION RATIOS AT CANADIAN IRON ORE MINES, 1989

| | Open-Pit Waste | Underground Waste | Iron Ore Mined | Mill Feed | Concentrate Produced | Waste/Ore Ratio | Waste/Usable Ore Ratio | Concentration Ratio |
|---|---|---|---|---|---|---|---|---|
| | | | | | (tonnes) | | | |
| **Newfoundland** | | | | | | | | |
| Iron Ore Company of Canada (Carol Division) (1) | 10 402 600 | | 35 183 022 | 35 183 022 | 15 052 057 | 0.30 | 0.69 | 2.34 |
| Wabush Mines | 6 106 950 | | 19 795 310 | 19 795 310 | 6 147 094 | 0.31 | 0.99 | 3.22 |
| **Quebec** | | | | | | | | |
| Quebec Cartier Mining Company (Mount Wright) | 20 003 314 | | 41 054 720 | 39 673 653 | 16 831 623 | 0.49 | 1.19 | 2.36 |
| **Ontario** | | | | | | | | |
| Adams Mine | 657 238 | | 3 397 445 | 3 477 838 | 1 283 514 | 0.19 | 0.51 | 2.71 |
| Algoma Ore Division (2) | | 2 409 | 1 357 020 | 1 377 202 | 1 314 421 | 0.00 | 0.00 | 1.05 |
| Sherman Mine | 1 359 154 | | 3 595 226 | 3 639 930 | 1 185 992 | 0.38 | 1.15 | 3.07 |

(1) A factor of 2.6 tonnes equals one cubic metre was used.

(2) Usable iron ore produced and subsequent ratios include 311 797 tonnes of steel plant waste oxide and 129 158 tonnes of lime.

TABLE 7: USABLE IRON ORE SHIPPED BY CANADIAN PRODUCERS, BY TYPE OF PRODUCT, 1989

| | Direct Shipping | | Concentrate | | Agglomerate | | Total | |
|---|---|---|---|---|---|---|---|---|
| | (tonnes) | (% Fe Nat) | (tonnes) | (% Fe Nat) | (tonnes) | (% Fe Nat) | (tonnes) | (% Fe Nat) |
| Newfoundland | | | | | | | | |
| Iron Ore Company of Canada (Carol Division) | | | 5 130 007 | 63.6 | 9 838 273 | 64.1 | 14 968 280 | 63.9 |
| Wabush Mines | | | | | 5 953 268 | 63.7 | 5 953 268 | 63.7 |
| Labrador-Quebec | | | | | | | | |
| Iron Ore Company of Canada (Sept-Îles Division) | 176 501 | 51.2 | | | | | 176 501 | 51.2 |
| Quebec | | | | | | | | |
| Quebec Cartier Mining Company (Mount Wright) | | | 7 734 422 | 63.2 | 8 063 916 | 64.3 | 15 798 338 | 63.8 |
| Ontario | | | | | | | | |
| Adams Mine | | | | | 1 145 139 | 60.7 | 1 145 139 | 60.7 |
| Algoma Ore Division | | | | | 1 242 711 | 50.3 | 1 242 711 | 50.3 |
| Sherman Mine | | | | | 1 023 374 | 59.9 | 1 023 374 | 59.9 |
| Others | | | 1 262 | .. | | | 1 262 | |
| British Columbia | | | | | | | | |
| Others | | | 25 685 | .. | | | 25 685 | |
| Total (1) | 176 501 | 51.2 | 12 891 376 | 63.2 | 27 266 681 | 63.1 | 40 334 558 | 63.1 |

(1) Average % Fe Nat calculated from available statistics.

.. Not available.

TABLE 8: USABLE IRON ORE SHIPPED BY CANADIAN PRODUCERS, BY DESTINATION, 1989

| | Canada | | United States | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | All Rail | Other | Great Lakes | Other Ports | All Rail | EC | Japan | Other | Total |
| | | | | | (tonnes) | | | | |
| **Newfoundland** | | | | | | | | | |
| Iron Ore Company of Canada | | | | | | | | | |
| Carol Div. (conc.) | | | 140 444 | | | 2 026 014 | 2 471 014 | 492 535 | 5 130 007 |
| Carol Div. (pellets) | | 873 315 | 350 797 | 5 119 130 | | 3 402 657 | | 92 374 | 9 838 273 |
| Wabush Mines (pellets) | | 3 147 789 | 1 964 467 | 121 523 | | 719 489 | | | 5 953 268 |
| Labrador-Quebec | | | | | | | | | |
| Iron Ore Company of Canada | | | | | | | | | |
| Sept-Îles Division | | | | | | | | | |
| (direct-shipping) | | 176 501 | | | | | | | 176 501 |
| Quebec | | | | | | | | | |
| Quebec Cartier Mining Company | | | | | | | | | |
| (pellets) | | 2 389 124 | 75 592 | 1 671 408 | | 3 927 792 | | | 8 063 916 |
| (concentrates) | | 25 295 | 314 987 | | | 6 865 235 | | 528 905 | 7 734 422 |
| Ontario | | | | | | | | | |
| Adams Mine (pellets) | 1 095 295 | | | | | | | | 1 095 295 |
| Algoma Ore Div. (sinter) | 1 242 711 | | | | | | | | 1 242 711 |
| Sherman Mine (pellets) | 1 023 374 | | | | | | | | 1 023 374 |
| Other | | 1 262 | | | | | | | 1 262 |
| British Columbia | | | | | | | | | |
| Others | | 25 685 | | | | | | | 25 685 |
| Total | 3 361 380 | 6 638 971 | 2 846 287 | 6 912 061 | | 16 941 187 | 2 471 014 | 1 113 814 | 40 284 714 |

TABLE 9: STOCKS OF USABLE IRON ORE AT MINES AND SHIPPING PORTS IN CANADA, 1988 AND 1989

| | December 31 1988 | December 31 1989 | Change in Stocks |
|---|---|---|---|
| | | (tonnes) | |
| Newfoundland | | | |
| Iron Ore Company of Canada | | | |
| at Sept-Îles | | | |
| (concentrates) | 898 027 | 120 150 | (777 877) |
| (pellets) | 455 858 | 998 186 | 542 328 |
| at Labrador City | | | |
| (concentrates) | 505 464 | 145 790 | (359 674) |
| (pellets) | 53 206 | 166 695 | 113 489 |
| Wabush Mines (pellets) | 375 830 | 746 316 | 370 486 |
| Labrador-Quebec | | | |
| Iron Ore Company of Canada | | | |
| Sept-Îles Division | | | |
| (direct-shipping) | 128 000 | 0 | (128 000) |
| Quebec | | | |
| Quebec Cartier Mining Company | | | |
| (pellets) | 778 200 | 833 579 | 55 379 |
| (concentrates) | 334 877 | 1 291 523 | 956 646 |
| Ontario | | | |
| Adams Mine (pellets) | 6 202 | 49 844 | 43 642 |
| Algoma Ore Div. (sinter) | 25 283 | 23 692 | (1 591) |
| Sherman Mine (pellets) | 976 | 11 759 | 10 783 |
| Total | 3 561 923 | 4 387 534 | 825 611 |

TABLE 10: ANALYSIS OF CANADIAN IRON ORE SHIPMENTS IN 1989

| | Shipments | Nat Fe | Dry Analysis | | | | | | | | $K_2O$ $Na_2O$ | Loss by Ignition | Moisture | Size Range |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Fe | P | $SiO_2$ | Mn | $Al_2O_3$ | CaO | MgO | S | | | | |
| | (tonnes) | | (percent) | | | | | | | | | | | |
| Newfoundland | | | | | | | | | | | | | | |
| Iron Ore Company of Canada | | | | | | | | | | | | | | |
| (Acid pellets) | 8 106 386 | 64.8 | 65.7 | 0.008 | 4.72 | 0.104 | 0.260 | 0.456 | 0.345 | .. | .. | .. | 1.36 | .. |
| (Fluxed pellets) | 1 731 887 | 61.1 | 62.0 | 0.010 | 4.68 | 0.105 | 0.290 | 4.240 | 1.726 | .. | .. | .. | 1.52 | .. |
| (High silica conc.) | 309 733 | 58.1 | 59.8 | 0.012 | 10.88 | 0.162 | 0.130 | 1.009 | 0.635 | .. | .. | .. | 2.84 | .. |
| (Concentrates) | 4 820 274 | 63.9 | 65.9 | 0.008 | 4.39 | 0.108 | 0.140 | 0.460 | 0.339 | .. | .. | .. | 2.98 | .. |
| Total Carol | 14 968 280 | 63.9 | 65.2 | 0.008 | 4.74 | 0.107 | 0.222 | 1.931 | 0.625 | .. | .. | .. | 1.93 | .. |
| Wabush Mines (pellets) | | | | | | | | | | | | | | |
| (Acid pellets) | 4 678 502 | 64.2 | .. | .. | 3.14 | 1.700 | .. | .. | .. | .. | .. | .. | 2.28 | .. |
| (Fluxed pellets) | 1 274 766 | 62.0 | .. | .. | 3.12 | 1.101 | 0.350 | 2.710 | 1.890 | .. | .. | .. | 2.19 | .. |
| Total Wabush | 5 953 268 | 63.7 | .. | .. | 3.14 | 1.572 | .. | .. | .. | .. | .. | .. | 2.26 | .. |
| Quebec-Labrador | | | | | | | | | | | | | | |
| Iron Ore Company Canada | | | | | | | | | | | | | | |
| Sept-Iles Division | | | | | | | | | | | | | | |
| (Blended) | 176 501 | 51.2 | 55.6 | 0.041 | 12.46 | 0.712 | 1.260 | .. | .. | .. | .. | .. | .. | .. |
| Quebec | | | | | | | | | | | | | | |
| Quebec Cartier Mining Company | | | | | | | | | | | | | | |
| (Concentrates) | 7 734 422 | 63.2 | 66.3 | 0.011 | 4.90 | 0.017 | 0.310 | 0.060 | 0.050 | 0.007 | 0.038 | .. | 4.73 | .. |
| (Acid pellets) | 6 031 255 | 64.3 | 65.3 | 0.010 | 5.40 | 0.020 | 0.450 | .. | 0.250 | 0.003 | 0.035 | 0.650 | 1.50 | .. |
| (Fluxed pellets) | 856 769 | 61.3 | 62.2 | 0.010 | 4.75 | 0.020 | 0.450 | .. | 1.700 | 0.010 | 0.065 | 1.300 | 1.50 | .. |
| (Low silica pellets) | 1 175 892 | 66.6 | 67.6 | 0.010 | 2.10 | 0.020 | 0.350 | .. | 0.003 | 0.003 | .. | .. | 1.50 | .. |
| Total Quebec Cartier | 15 798 338 | 63.8 | 65.8 | 0.010 | 4.87 | 0.019 | 0.374 | 0.029 | 0.212 | 0.005 | .. | .. | 4.87 | .. |
| Ontario | | | | | | | | | | | | | | |
| Adams Mine | | | | | | | | | | | | | | |
| (Fluxed pellets) | 1 095 295 | 60.7 | .. | .. | 5.31 | .. | 0.260 | 4.700 | 1.750 | .. | 0.089 | .. | 0.69 | 1/4" - 1/2" |
| Algoma Ore Division | | | | | | | | | | | | | | |
| Sinter (Fluxed sinter) | 1 242 711 | 50.3 | 50.3 | 0.015 | 6.57 | 1.990 | 1.100 | 13.070 | 6.080 | 0.065 | 0.100 | - | - | .. |
| Sherman Mine | | | | | | | | | | | | | | |
| (Fluxed pellets) | 1 023 374 | 59.9 | 60.4 | .. | 5.31 | .. | 0.410 | 4.750 | 1.880 | | 0.086 | .. | 0.85 | -5/8"+3/8" |

.. Not available; - Nil.

SECTEUR DE LA POLITIQUE MINÉRALE
RAPPORT INTERNE
MRI 90/2

# STATISTIQUES DE L'INDUSTRIE CANADIENNE DU MINERAI DE FER 1989

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Énergie, Mines et Ressources Canada
Energy, Mines and Resources Canada

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## PRÉFACE

Le présent rapport fait suite à la série de Statistiques concernant l'industrie canadienne du minerai de fer qui avait été publiée pour le bulletin d'information sur les minéraux de 1955 à 1970. Avec le chapitre du minerai de fer de l'Annuaire des minéraux du Canada, les présentes données statistiques passent en revue les différents aspects de l'industrie canadienne du minerai de fer pour 1989.

Les sociétés qui font partie de l'industrie canadienne du minerai de fer ont fourni au Secteur de la politique minérale les données nécessaires à la compilation des données statistiques. Nous les remercions de leur collaboration et de l'empressement avec lequel elles ont répondu à nos demandes.

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**ILLUSTRATION**


Le minerai de fer au Canada, 1989 ..... 1

## PRODUCTEURS
(Les numéros de référence ci-dessous se rapportent à ceux de la carte.)

1. Compagnie Minière IOC,
Division de Carol
(mine, concentrateur, usine de bouletage)

2. Wabush Mines
(mine, concentrateur)

3. La Compagnie Minière Québec
(mine, concentrateur)

4. Compagnie Minière IOC (port)

5. Wabush Mines
(usine de bouletage, port)

6. La Compagnie Minière Québec Cartier
(usine de bouletage, port)

7. Dofasco Inc.,
Mine Adams
(mine, concentrateur, usine de bouletage)

8. Dofasco Inc.,
Mine Sherman
(mine, concentrateur, usine de bouletage)

9. Division Algoma Ore de la Société
Aciers Algoma Limitée
(mine, concentrateur, usine de bouletage)

TABLEAU 1: PRODUCTEURS CANADIENS DE MINERAI DE FER, 1988 ET 1989

| Société et emplacement | Sociétés participantes | Matériaux extraits et (ou) traités 1989 | Produit expédié 1989 | Expéditions 1988 | Expéditions 1989 |
|---|---|---|---|---|---|
| | | (% Fe naturel) | (% Fe sec/humide) | (000 tonnes naturelles) | |
| Mine Adams; canton de Boston, près de Kirkland Lake (Ontario). | Dofasco Inc., gérée par la Cliffs of Canada Limited, filiale en propriété exclusive de The Cleveland-Cliffs Iron Company | Magnétite, mine à ciel ouvert 19 | Boulettes 61,42/60,98 | 1 017 | 1 095 |
| Division Algoma Ore de Aciers Algoma Limitée mine et usine de frittage près de Wawa (Ontario). | Société en propriété exclusive | Sidérite, mine souterraine 34 | Aggloméré 50,3/50,3 | 1 066 | 1 243 |
| Compagnie minière IOC mines, concentrateur et usine de bouletage de lac Carol, au Labrador, expéditions directes de minerai de la réserve de Sept-Îles (Québec). | Labrador Mining and Exploration Company Limited, 11 %; M.A. Hanna Company (agent gérant), 28,14 %; Bethlehem Steel Corporation, 34,52 %; Dofasco Inc., 6,38 %; National Steel Corporation, 19,96 %. | Hématite, mine à ciel ouvert 38,9 | Expédition directe 55,6/51,2<br>Concentrés 65,5/63,6<br>Boulettes 65,0/64,0 | 788<br>4 127<br>9 853 | 177<br>5 130<br>9 838 |
| La Compagnie Minière Québec Cartier; comprend la mine et le concentrateur au mont Wright, près de Fermont (Québec); usine de bouletage à Port Cartier (Québec). | Dofasco Inc. 50 %; Companhia Auxiliar de Empresas de Mineracao 25 %; Mitsui & Co., Ltd., 25 %. | Hématite, mine à ciel ouvert 32,1 | Concentrés 66,3/63,2<br>Boulettes 65,45/64,47 | 8 506<br>8 331 | 7 734<br>8 063 |
| Mine Sherman; près de Temagami (Ontario). | Dofasco Inc., 90 %; Tetapega Mining Company Limited (filiale en propriété exclusive de The Cleveland-Cliffs Iron Company), 10 %. L'exploitation et la gestion de la mine sont assurées par la Cliffs of Canada Limited, également une filiale en propriété exclusive de The Cleveland-Cliffs Iron Company. | Magnétite, mine à ciel ouvert 25,52 | Boulettes 60,41/59,93 | 865 | 1 023 |
| Wabush Mines; la mine Scully comprend la mine et le concentrateur de Wabush au Labrador; la division de Pointe-Noire comprend l'usine de frittage de boulettes de Pointe-Noire (Québec). | Stelco Inc., 34,5 %; Dofasco Inc., 22,1 %; Inland Steel Company., 13,77 %; Finsider of Italy., 8,9 % et Pickands Mather & Co. (agent gérant) 6,95 %., Acme Steel Co. 13,77 %. | Hématite, mine à ciel ouvert 35,05 | Boulettes 65,19/63,71 | 6 035 | 5 953 |

TABLEAU 2: MINERAI DE FER BRUT EXTRAIT AU CANADA, SELON LA VARIÉTÉ ET LA TENEUR, 1989

| | Hématite | | Magnétite | | Sidérite | |
|---|---|---|---|---|---|---|
| | (tonnes) | (% Fe nat.) | (tonnes) | (% Fe nat.) | (tonnes) | (% Fe nat.) |
| **Terre-Neuve** | | | | | | |
| Compagnie minière IOC | | | | | | |
| Division de Carol | 35 183 022 | 38,90 | | | | |
| Wabush Mines | 19 795 310 | 35,05 | | | | |
| **Québec** | | | | | | |
| La Compagnie Minière Québec Cartier | | | | | | |
| (mont Wright) | 41 054 720 | 31,20 | | | | |
| **Ontario** | | | | | | |
| Mine Adams | | | 3 397 445 | 23,00 | 1 357 020 | 34,15 |
| Division Algoma Ore | | | | | | |
| Mine Sherman | | | 3 595 226 | 25,52 | | |
| **Total** | 96 033 052 | 27,59 | 6 992 671 | 24,30 | 1 357 020 | 34,15 |

TABLEAU 3: MINERAI DE FER BRUT EXTRAIT AU CANADA, SELON LE MODE D'EXTRACTION, 1989

| | À ciel ouvert | | Souterraine | | Total | |
|---|---|---|---|---|---|---|
| | (tonnes) | (% Fe nat.) | (tonnes) | (% Fe nat.) | (tonnes) | (% Fe nat.) |
| Terre-Neuve | | | | | | |
| Compagnie minière IOC | | | | | | |
| Division de Carol | 35 183 022 | 38,90 | | | 35 183 022 | 38,90 |
| Wabush Mines | 19 795 310 | 35,05 | | | 19 795 310 | 35,05 |
| Québec | | | | | | |
| La Compagnie Minière Québec Cartier | | | | | | |
| (mont Wright) | 41 054 720 | 31,20 | | | 41 054 720 | 31,20 |
| Ontario | | | | | | |
| Mine Adams | 3 397 445 | 23,00 | | | 3 397 445 | 23,00 |
| Division Algoma Ore | | | 1 357 020 | 34,15 | 1 357 020 | 34,15 |
| Mine Sherman | 3 595 226 | 25,52 | | | 3 595 226 | 25,52 |
| Total | 103 025 723 | 34,10 | 1 357 020 | 34,15 | 104 382 743 | 34,10 |

TABLEAU 4: RÉPARTITION DU MINERAI DE FER BRUT EXTRAIT AU CANADA, 1989

| | Pour expédition directe | | Vers les usines de concentration | | Total | |
|---|---|---|---|---|---|---|
| | (tonnes) | (% Fe nat.) | (tonnes) | (% Fe nat.) | (tonnes) | (% Fe nat.) |
| Terre-Neuve | | | | | | |
| Compagnie minière IOC (Division de Carol) | | | 35 183 022 | 38,90 | 35 183 022 | 38,90 |
| Wabush Mines | | | 19 795 310 | 35,05 | 19 795 310 | 35,05 |
| Québec | | | | | | |
| La Compagnie Minière Québec Cartier (mont Wright) | | | 39 673 653 | 32,10 | 39 673 653 | 32,10 |
| Ontario | | | | | | |
| Mine Adams | | | 3 477 838 | 23,00 | 3 477 838 | 23,00 |
| Division Algoma Ore | | | 1 377 202 | 34,15 | 1 377 202 | 34,15 |
| Mine Sherman | | | 3 639 930 | 25,52 | 3 639 930 | 25,52 |
| Total | | | 103 146 955 | 34,47 | 103 146 955 | 34,47 |

TABLEAU 5: MINERAI DE FER UTILISABLE PRODUIT AU CANADA, SELON LE TYPE DE PRODUIT, 1989

| | Expédition directe | | Concentrés | | Agglomérés | | Total | |
|---|---|---|---|---|---|---|---|---|
| | (tonnes) | (% Fe nat.) | (tonnes) | (% Fe nat.) | (tonnes) | (% Fe nat.) | (tonnes) | (% Fe nat) |
| Terre-Neuve | | | | | | | | |
| Compagnie minière IOC | | | | | | | | |
| (Division de Carol) | | | 4 096 773 | 64,33 | 10 496 532 | 64,21 | 14 593 305 | 64,26 |
| Wabush Mines | | | | | 6 323 754 | 63,63 | 6 323 754 | 63,63 |
| Québec | | | | | | | | |
| La Compagnie Minière Québec | | | | | | | | |
| Cartier (mont Wright) | | | 8 691 068 | 63,20 | 8 119 295 | 63,95 | 16 810 363 | 63,56 |
| Ontario | | | | | | | | |
| Mine Adams | | | | | 1 138 937 | 60,91 | 1 138 937 | 60,91 |
| Division Algoma Ore (1) | | | | | 1 241 120 | 50,32 | 1 241 120 | 50,32 |
| Mine Sherman | | | | | 1 034 157 | 59,93 | 1 034 157 | 59,93 |
| Total | | | 12 787 841 | 63,56 | 28 353 795 | 63,11 | 41 141 636 | 63,25 |

(1) Comprend 311 797 tonnes de déchets d'oxydes de fer et 129 158 tonnes de chaux.

TABLEAU 6: RAPPORT DE LA CONCENTRATION DÉCHETS/MINERAI DANS LES MINES DE MINERAI DE FER AU CANADA, 1989

| | Déchets, mines à ciel ouvert | Déchets, mines souterraines | Minerai de fer extrait | Charge d'alimentation de l'usine | Concentré produit | Rapport déchets/minerai | Rapport déchets/minerai utilisable | Rapport de concentration |
|---|---|---|---|---|---|---|---|---|
| | (tonnes) | | | | | | | |
| Terre-Neuve | | | | | | | | |
| Compagnie minière IOC (Division de Carol) (1) | 10 402 600 | | 35 183 022 | 35 183 022 | 15 052 057 | 0,30 | 0,69 | 2,34 |
| Wabush Mines | 6 106 950 | | 19 795 310 | 19 795 310 | 6 147 094 | 0,31 | 0,99 | 3,22 |
| Québec | | | | | | | | |
| La Companie Minière Québec Cartier (mont Wright) | 20 003 314 | | 41 054 720 | 39 673 653 | 16 831 623 | 0,49 | 1,19 | 2,36 |
| Ontario | | | | | | | | |
| Mine Adams | 657 238 | | 3 397 445 | 3 477 838 | 1 283 514 | 0,19 | 0,51 | 2,71 |
| Division Algoma Ore (2) | | 2 409 | 1 357 020 | 1 377 202 | 1 314 421 | 0,00 | 0,00 | 1,05 |
| Mine Sherman | 1 359 154 | | 3 595 226 | 3 639 930 | 1 185 992 | 0,38 | 1,15 | 3,07 |

(1) On a utilisé le facteur suivant: 2,6 tonnes métriques égalent un mètre cube.

(2) Le minerai de fer utilisable produit et les rapports comprennent 311 797 tonnes de déchets d'oxyde de minerai d'aciérie et 129 158 tonnes de chaux.

TABLEAU 7: MINERAI DE FER UTILISABLE EXPÉDIÉ PAR LES PRODUCTEURS CANADIENS, SELON LE TYPE DE PRODUIT, 1989

| | Expédition directe | | Concentrés | | Agglomérés | | Total | |
|---|---|---|---|---|---|---|---|---|
| | (tonnes) | (% Fe nat.) | (tonnes) | (% Fe nat.) | (tonnes) | (% Fe nat.) | (tonnes) | (% Fe nat.) |
| Terre-Neuve | | | | | | | | |
| Compagnie minière IOC | | | | | | | | |
| (Division de Carol) | | | 5 130 007 | 63,6 | 9 838 273 | 64,1 | 14 968 280 | 63,9 |
| Wabush Mines | | | | | 5 953 268 | 63,7 | 5 953 268 | 63,7 |
| Labrador-Québec | | | | | | | | |
| Compagnie minière IOC | | | | | | | | |
| (Division de Sept-Îles) | 176 501 | 51,2 | | | | | 176 501 | 51,2 |
| Québec | | | | | | | | |
| La Compagnie Minière Québec | | | | | | | | |
| Cartier (mont Wright) | | | 7 734 422 | 63,2 | 8 063 916 | 64,3 | 15 798 338 | 63,8 |
| Ontario | | | | | | | | |
| Mine Adams | | | | | 1 145 139 | 60,7 | 1 145 139 | 60,7 |
| Division Algoma Ore | | | | | 1 242 711 | 50,3 | 1 242 711 | 50,3 |
| Mine Sherman | | | | | 1 023 374 | 59,9 | 1 023 374 | 59,9 |
| Autres | | | 1 262 | n.d. | | | 1 262 | |
| Colombie-Britannique | | | 25 685 | n.d. | | | | |
| Autres | | | | | | | 25 685 | |
| Total(1) | 176 501 | 51,2 | 12 891 376 | 63,2 | 27 266 681 | 63,1 | 40 334 558 | 63,1 |

(1) La teneur moyenne en Fe naturel est calculée à partir des statistiques disponibles.

n.d. :non disponible

TABLEAU 8: MINERAI DE FER UTILISABLE EXPÉDIÉ PAR LES PRODUCTEURS CANADIENS, SELON LA DESTINATION, 1989

| | Canada | | États-Unis | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Chemin de fer | Autre | Grands Lacs | Autres ports | Chemin de fer | CE | Japon | Autres pays | Total |
| | | | | | (tonnes) | | | | |
| **Terre-Neuve** | | | | | | | | | |
| Compagnie minière IOC | | | | | | | | | |
| Div. de Carol (conc.) | | | 140 444 | | | 2 026 014 | 2 471 014 | 492 535 | 5 130 007 |
| Div. de Carol (boulettes) | | 873 315 | 350 797 | 5 119 130 | | 3 402 657 | | 92 374 | 9 838 273 |
| Wabush Mines (boulettes) | | 3 147 789 | 1 964 467 | 121 523 | | 719 489 | | | 5 953 268 |
| **Labrador-Québec** | | | | | | | | | |
| Compagnie minière IOC | | | | | | | | | |
| Division Sept-Îles | | | | | | | | | |
| (expéditions directes) | | 176 501 | | | | | | | 176 501 |
| **Québec** | | | | | | | | | |
| La Compagnie Minière Québec | | | | | | | | | |
| Cartier (boulettes) | | 2 389 124 | 75 592 | 1 671 408 | | 3 927 792 | | | 8 063 916 |
| (concentrés) | | 25 295 | 314 987 | | | 6 865 235 | | 528 905 | 7 734 422 |
| **Ontario** | | | | | | | | | |
| Mine Adams (boulettes) | 1 095 295 | | | | | | | | 1 095 295 |
| Div. Algoma Ore (agglomérés) | 1 242 711 | | | | | | | | 1 242 711 |
| Mine Sherman (boulettes) | 1 023 374 | | | | | | | | 1 023 374 |
| Autres | | 1 262 | | | | | | | 1 262 |
| **Colombie-Britannique** | | | | | | | | | |
| Autres | | 25 685 | | | | | | | 25 685 |
| Total | 3 361 380 | 6 638 971 | 2 846 287 | 6 912 061 | | 16 941 187 | 2 471 014 | 1 113 814 | 40 284 714 |

TABLEAU 9: STOCKS DE MINERAI DE FER UTILISABLE DANS LES MINES ET LES PORTS D'EXPÉDITIONS AU CANADA, 1988 ET 1989

| | 31 décembre 1988 | 31 décembre 1989 | Variation des stocks |
|---|---|---|---|
| | | (tonnes) | |
| Terre-Neuve | | | |
| Compagnie minière IOC | | | |
| à Sept-Îles | | | |
| (concentrés) | 898 027 | 120 150 | (777 877) |
| (boulettes) | 455 858 | 998 186 | 542 328 |
| à Labrador City | | | |
| (concentrés) | 505 464 | 145 790 | (359 674) |
| (boulettes) | 53 206 | 166 695 | 113 489 |
| Wabush Mines (boulettes) | 375 830 | 746 316 | 370 486 |
| Labrador-Québec | | | |
| Compagnie minière IOC | | | |
| Division Sept-Îles | | | |
| (expéditions directes) | 128 000 | 0 | (128 000) |
| Québec | | | |
| La Compagnie Minière Québec | | | |
| Cartier (boulettes) | 778 200 | 833 579 | 55 379 |
| (concentrés) | 334 877 | 1 291 523 | 956 646 |
| Ontario | | | |
| Mine Adams (boulettes) | 6 202 | 49 844 | 43 642 |
| Div. Algoma Ore (agglomérés) | 25 283 | 23 692 | (1 591) |
| Mine Sherman (boulettes) | 976 | 11 759 | 10 783 |
| Total | 3 561 923 | 4 387 534 | 825 611 |

TABLEAU 10: ANALYSE DES EXPÉDITIONS CANADIENNES DE MINERAI DE FER, 1989

| | Expéditions | Fe nat. | Analyse par voie sèche | | | | | | | | $K_2O$ $Na_2O$ | Perte de combustion | Humidité | Échelle granulométrique |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Fe | P | $SiO_2$ | Mn | $Al_2O_3$ | CaO | MgO | S | | | | |
| | (tonnes) | | | | | (%) | | | | | | | | |
| **Terre-Neuve** | | | | | | | | | | | | | | |
| Compagnie minière IOC | | | | | | | | | | | | | | |
| (Boulettes acides) | 8 106 386 | 64,8 | 65,7 | 0,008 | 4,72 | 0,104 | 0,260 | 0,456 | 0,345 | n.d. | n.d. | n.d. | 1,36 | n.d. |
| (Boulettes fondantes) | 1 731 887 | 61,1 | 62,0 | 0,010 | 4,68 | 0,105 | 0,290 | 4,240 | 1,726 | n.d. | n.d. | n.d. | 1,52 | n.d. |
| (conc. haute teneur silice) | 309 733 | 58,1 | 59,8 | 0,012 | 10,88 | 0,162 | 0,130 | 1,009 | 0,635 | n.d. | n.d. | n.d. | 2,84 | n.d. |
| (Concentrés) | 4 820 274 | 63,9 | 65,9 | 0,008 | 4,39 | 0,108 | 0,140 | 0,460 | 0,339 | n.d. | n.d. | n.d. | 2,98 | n.d. |
| Total, Carol | 14 968 280 | 63,9 | 65,2 | 0,008 | 4,74 | 0,107 | 0,222 | 1,931 | 0,625 | n.d. | n.d. | n.d. | 1,93 | n.d. |
| Wabush Mines (Boulettes) | | | | | | | | | | | | | | |
| (Boulettes acides) | 4 678 502 | 64,2 | n.d. | n.d. | 3,14 | 1,700 | n.d. | n.d. | n.d. | n.d. | n.d. | n.d. | 2,28 | n.d. |
| (Boulettes fondantes) | 1 274 766 | 62,0 | n.d. | n.d. | 3,12 | 1,101 | 0,350 | 2,710 | 1,890 | n.d. | n.d. | n.d. | 2,19 | n.d. |
| Total, Wabush | 5 953 268 | 63,7 | n.d. | n.d. | 3,14 | 1,572 | n.d. | n.d. | n.d. | n.d. | n.d. | n.d. | 2,26 | n.d. |
| **Québec-Labrador** | | | | | | | | | | | | | | |
| Compagnie minière IOC | | | | | | | | | | | | | | |
| Division de Sept-Îles | | | | | | | | | | | | | | |
| (mélangés) | 176 501 | 51,2 | 55,6 | 0,041 | 12,46 | 0,712 | 1,260 | n.d. | n.d. | n.d. | n.d. | n.d. | n.d. | n.d. |
| **Québec** | | | | | | | | | | | | | | |
| La Compagnie Minière Québec | | | | | | | | | | | | | | |
| Cartier (Concentrés) | 7 734 422 | 63,2 | 66,3 | 0,011 | 4,90 | 0,017 | 0,310 | 0,060 | 0,050 | 0,007 | 0,038 | n.d. | 4,73 | n.d. |
| (Boulettes acides) | 6 031 255 | 64,3 | 65,3 | 0,010 | 5,40 | 0,020 | 0,450 | n.d. | 0,250 | 0,003 | 0,035 | 0,650 | 1,50 | n.d. |
| (Boulettes fondantes) | 856 769 | 61,3 | 62,2 | 0,010 | 4,75 | 0,020 | 0,450 | n.d. | 1,700 | 0,010 | 0,065 | 1,300 | 1,50 | n.d. |
| (Boulettes basse silice) | 1 175 892 | 66,6 | 67,6 | 0,010 | 2,10 | 0,020 | 0,350 | n.d. | 0,003 | 0,003 | n.d. | n.d. | 1,50 | n.d. |
| Total Québec Cartier | 15 798 338 | 63,8 | 65,8 | 0,010 | 4,87 | 0,019 | 0,374 | 0,029 | 0,212 | 0,005 | n.d. | n.d. | 4,87 | n.d. |
| **Ontario** | | | | | | | | | | | | | | |
| Mines Adams | | | | | | | | | | | | | | |
| (Boulettes fondantes) | 1 095 295 | 60,7 | n.d. | n.d. | 5,31 | n.d. | 0,260 | 4,700 | 1,750 | n.d. | 0,089 | n.d. | 0,69 | 1/4" - 1/2" |
| Division Algoma Ore | | | | | | | | | | | | | | |
| Aggloméré (fondants) | 1 242 711 | 50,3 | 50,3 | 0,015 | 6,57 | 1,990 | 1,100 | 13,070 | 6,080 | 0,065 | 0,1 | - | - | n.d. |
| Mine Sherman | | | | | | | | | | | | | | |
| (Boulettes fondantes) | 1 023 374 | 59,9 | 60,4 | n.d. | 5,31 | n.d. | 0,410 | 4,750 | 1,880 | n.d. | 0,086 | n.d. | 0,85 | -5/8"+3/8" |

n.d. :non disponible; -:néant